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PHYSICIAN PARTICIPATION IN MEDICAID REVISITED

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This research was supported under Grant No. 1R01MH42662-02 from the National Institute of Mental Health.

ABSTRACT

Physician surveys conducted in the late 1970's showed that one-quarter of private practice physicians did not accept Medicaid, with nonparticipation rates considerably higher for OB-GYNs. Program cutbacks during the Reagan Administration, as well as other factors, may have changed physicians' willingness to participate in Medicaid. We analyzed participation rates for two comparable samples of physicians: one group surveyed in 1977-78, and the other surveyed in 1984-85. Over this time period, there has been a small, but statistically significant, increase in the percentage of physicians willing to treat Medicaid patients (from 76.5% to 81.7%). While OB-GYNs remain one of the specialties least likely to participate, their number accepting at least some Medicaid patients also increased: from 64% to 73%. Regression analysis showed that physicians are as sensitive now to relative fee levels as they were in the late 1970's. In both surveys, a 10% increase in Medicaid payment would raise the probability of participation by 2%. These findings reinforce the recent Congressional mandate that state Medicaid programs guarantee access to obstetric and pediatric services by ensuring "adequate" payment levels.

INTRODUCTION

A number of studies conducted during the 1970's documented that many private practice physicians were unwilling to accept Medicaid, while those who did participate generally treated relatively few Medicaid patients.[1-5] Participation rates were found to be particularly low for OB-GYNs and certain subspecialists, like cardiologists. Over one-third of OB-GYNs reported, for example, that they did not treat any Medicaid patients, compared with one-quarter of general practitioners and only 10 percent of general surgeons.[2] Participation decisions during the 1970's were shown to be particularly sensitive to Medicaid fee schedules and administrative red tape.[1-5] Physicians were much more likely to participate in their state Medicaid program when Medicaid fees were higher, and when the burden of collecting from Medicaid was less onerous.

These studies are now quite dated and may no longer paint an accurate picture of Medicaid participation by private practice physicians. Program cutbacks during the early 1980's under the Reagan Administration may have discouraged even more physicians from participating. On the other hand, increased competition due to continued growth in the supply of physicians may have fostered a willingness to accept Medicaid patients. Physicians may also be more, or less, sensitive now to economic and programmatic factors in making their participation decisions. From 1979 to 1984, for example, Medicaid fees fell markedly in real terms, compared with those of other insurors[6]; are they now so low that no reasonable increase could be expected to encourage participation?

Of course, many Medicaid eligibles receive services in institutional settings, like hospital outpatient clinics, so that access to care may not be as restricted as these studies might suggest. In fact, available research suggests that, in areas with more stringent physician reimbursement policies, Medicaid patients do seek (and receive) physician services in these other settings.[6,7] Nevertheless, an evaluation of more current Medicaid participation rates is still important for two reasons. First, nonparticipation by private physicians is what leads many Medicaid recipients

to seek services from hospital clinics in the first place, care that is demonstrably more expensive than comparable office-based care. Second, one of the principal objectives of the original Medicaid legislation was to encourage "mainstream" medical care. This objective has been reinforced by the recent legislation mandating state Medicaid programs to increase payment levels for obstetric and pediatric services.

In this paper, we take advantage of a recent (1984-85) national survey of private practice physicians who were asked whether they accept Medicaid patients. Results from this survey are then compared with a similar sample of physicians surveyed in 1977-78.

DATA SOURCES AND METHODS

The primary data bases for this analysis are the national physician surveys conducted by the National Opinion Research Center (NORC) for the Health Care Financing Administration (HCFA) in 1977, 1978, and 1984-85. An extensive questionnaire was administered to all physicians by telephone. The questionnaire included data on practice costs, work effort, physician income, fees, and Medicaid participation. Response rates averaged over 70 percent in each of the three surveys.

The 1977 and 1978 surveys each represented a nationally representative sample of office-based physicians in 15 specialties, with approximately 4,200 physicians in each year. The Medicaid participation levels of these physicians has been extensively analyzed and reported elsewhere.[2,3] The 1977-78 participation data shown in this paper were obtained from that earlier work.

Sample selection for the 1984-85 survey differed substantially from that of the earlier years. Most important, this survey represented a nationally representative sample of all patient care physicians, including those practicing exclusively in hospitals and HMOs. In order to make the different surveys comparable, we dropped all physicians from the 1984-85 survey who would not have been selected had the 1977-78 sampling criteria been used. Thus, we excluded physicians who were employees of hospitals, clinics, or HMOs

as well as physicians practicing in groups of 10 or more. The final sample size was 2,197. Sample sizes by specialty are shown in Table 1.

Medicaid participation rates were calculated from the individual physician's response to the following question: "About what percentage of your patients have state Medicaid as a primary payor?" The use of physician self-reports may introduce some error into our participation rates. A study of pediatricians in 1979-80 found that participating physicians tended to overestimate considerably the share of their practice devoted to Medicaid patients.[8] Nonparticipating physicians, of course, always correctly reported their participation rates as zero. Regression analysis of the factors influencing the Medicaid participation decision yielded the same results, however, regardless of whether the self-reported or the actual participation rate was used. Furthermore, there is no reason to believe that the magnitude of physicians' overestimates would vary over time (and hence from one survey to the next).

DESCRIPTIVE RESULTS

Trends in Medicaid Participation Rates

The extent of overall physician participation in Medicaid is shown in Figure 1. The line marked with crosses (+) is based on 1984-85 participation levels, while the line marked with squares represents the 1977-78 surveys. Both graphs display a marked right skew, i.e., towards no or low levels of participation. Nevertheless, the percent of physicians reporting that they do not treat any Medicaid patients has fallen, from 22.7 percent of physicians in 1977-78 to 16.5 percent in 1984-85.

At the same time, the tail of the distribution has shortened over time. In 1977-78, one-seventh of physicians surveyed (14.5 percent) were classified as "large Medicaid practices," that is, practices in which 30 percent or more of the physician's patients receive Medicaid. By contrast, only one-half as many would be considered large Medicaid practices in 1984-85 (7.4 percent). Thus, a larger proportion of physicians were accepting Medicaid in the mid-1980's, but the relative number of patients being treated were smaller on

average. In fact, the average Medicaid participation rate fell over this time period, from 12.1 to 9.5 percent, a small but statistically significant decline.

Table 2 compares Medicaid participation levels by specialty for this time period. Two percentages are shown for each survey period: the percent of physicians accepting at least some Medicaid patients, and the average participation rate (the percent of patients who receive Medicaid, averaged across all physicians). With a few exceptions, there has been a statistically significant increase in the proportion of physicians willing to treat Medicaid patients for all specialty groups. In the case of OB-GYN, pediatrics, cardiology, and several other subspecialties, the increases have been dramatic. While OB-GYNs remain one of the specialties least likely to participate, the number of participants has risen markedly, from 64 to 73 percent.

At the same time, the share of the average practice devoted to Medicaid patients has declined for most specialties. OB-GYN and pediatrics are exceptions, suggesting that Medicaid access has improved for patients visiting these two specialties. This is encouraging, since the vast majority of Medicaid eligibles are children and women of child-bearing age. However, it must be noted that the increase in average rates is not significant in the case of OB-GYNs, and only at the 10 percent level for pediatricians.

A few specialties show evidence of real erosion in their participation levels over time. Participation rates have fallen for general surgery, internal medicine, and psychiatry, with no offsetting increase in the number of these physicians who are willing to treat at least some Medicaid patients.*

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*The "other" surgical specialist category also shows an increased unwillingess in the number of physicians who will accept any Medicaid patients, a fact that helps drive down their average participation levels. The specialists who make up this category are considerably different between the two survey periods, however, with a large number of thoracic and plastic surgeons supplementing the neurosurgeons and otolaryngologists who were sampled in the 1977-78 surveys. Thus, observed differences in participation rates between the two time periods may have more to do with the change in specialty composition than with changes in attitude toward the Medicaid program.

FACTORS ENCOURAGING MEDICAID PARTICIPATION

Analytic Framework

The physician's decision to see Medicaid patients can be considered in terms of a two-market demand model: the private and the public markets. This model has been described in detail elsewhere[1] and will only be summarized here. In the private market, the physician is a price-setter; demand is downward-sloping, and additional visits are demanded only at lower prices. In the public market, fees are predetermined, and the physician serving this market can provide as much as he or she chooses (within limits) at this fixed price. Medicaid is a classic example of this fixed-fee market.

As long as private patients (or their insurors) are willing to pay fees higher than the fixed Medicaid fee, physicians will prefer to treat private patients and not to participate in Medicaid. Once the Medicaid fee exceeds the marginal revenue derived from privately insured patients, the physician will begin to treat Medicaid patients. The point at which this occurs and the extent to which the physician continues to participate will depend on Medicaid coverage and payment generosity, other things being equal.

Are these policy variables still significant predictors of physician participation in Medicaid? Has the magnitude of their impacts increased or decreased over time?

Estimation Methods

Previous work with the 1977-78 surveys has found that participation levels were higher when Medicaid fees were higher relative to those of other insurors, when the costs of collecting those fees were lower, and when a larger proportion of the population were eligible for Medicaid benefits[2,3]. Similarly, researchers using claims data have also found that greater Medicaid reimbursement elicited higher participation rates.[5,9]

Previous work also had shown that the factors influencing the physician's decision to participate were at times different in direction or magnitude from those influencing a decision to expand the Medicaid caseload once the physician was already in the Medicaid market. To analyze this, we

estimated two regression equations: (1) the physician's dichotomous participation decision (PART=1 if the physician participates in Medicaid and zero if he/she does not participate); and (2) the percent of practice devoted to Medicaid patients for participating physicians only (PCTMCD). Multivariate probit analysis was used for the first equation, and ordinary least squares (OLS) regression for the latter.

Researchers, especially economists, often use OLS regression coefficients to determine the direct impact of a change in an independent variable on the dependent variable; these impacts are called elasticities (for continuous independent variables) or marginal effects (for dummy variables). Signs and statistical significance of probit coefficients provide direction of effects, but otherwise cannot be interpreted directly. Interpretation of the direct impacts (elasticities and marginal effects) is a more complex process involving cumulative normal distribution tables.

Variable definitions and means are provided in Table 3. All monetary variables have been adjusted for geographic cost-of-living differences, using a method developed by the Institute of Medicine[10] and updated for use in this study with more recent data.

Regression Results

The results of the two regression equations are presented in Table 4. As expected, some parameter estimates do change in magnitude or sign between the probit equation and the OLS equation, suggesting behavioral differences in the decision to participate in Medicaid, and the percent of Medicaid patients accepted, given the first decision. These results are very similar to those obtained in previous work with the 1977-78 surveys.

Because the probit coefficients are not directly interpretable, a table of marginal impacts of the statistically significant variables is provided (Table 5). Also included are the appropriate impacts for the OLS results.

Two variables were included to measure the influence of relative fee schedules: the Medicaid fee for a follow-up hospital visit (MCDF) and Blue Shield's payment for the same procedure (BSF). The Blue Shield fee was used as a proxy for all private insurors. The impact of an increase in the

Medicaid fee was positive as expected, and significant in both equations. Physicians are still willing to treat more Medicaid patients when program fees are higher. A 10 percent increase in Medicaid reimbursement would raise the probability of participation by 2.1 percent. A comparable Medicaid fee increase in 1977-78 was estimated to have almost the identical effect.[2,3] The Medicaid program also still competes with other third-party payors for physician time; higher Blue Shield fees significantly reduce the probability of physician participation in Medicaid. Relative payment rates by private insurors apparently has no effect, once the physician has decided to treat at least some Medicaid patients. (This is also consistent with the results obtained with the earlier surveys.)

State Medicaid programs vary in how they choose to control utilization of physician services. They may place limits on the quantity of services covered, they may impose prior authorization requirements, or they may do nothing. Earlier work had show that such restrictions did discourage physicians from entering the program, although they had no effect on the relative number of Medicaid patients seen by participating physicians. Based on more recent survey data, physicians now seem impervious to limitations or prior authorization requirements; Medicaid participation levels appear unaffected. In part, this may be due to the spread of cost control methods across the country and their acceptance (or tolerance) by physicians. Seven state Medicaid programs adopted or expanded utilization controls for physician services.[7] Almost one-half (44%) of the 1984-85 survey physicians practice in states with such restrictions, for example, double the number found in the late 1970's. During the 1980's, many private insurors also began to adopt such utilization control procedures, a fact that may also have fostered their acceptance.

State Medicaid programs are also given some flexibility in the criteria they use to determine Medicaid eligibility. Where the relative pool of Medicaid recipients is larger (MCDELIG), the demand for Medicaid services should also be higher, encouraging physician participation. Physicians who have already decided to accept Medicaid patients do devote more of their practice to Medicaid patients when they are located in areas with relatively

large numbers of Medicaid eligibles, but the probability of participation is lower in those same areas. Similar inconsistent signs were also found in earlier work for medical and surgical specialists (but not for primary care physicians, where the signs were consistently positive). One explanation is that both the number of nonparticipants and the number of large Medicaid practices are higher in areas with relatively more Medicaid eligibles, due to residential segregation. Poor patients are concentrated in the inner city, with physicians practicing elsewhere in the city or in the suburbs. Thus, rather than an increase in average participation rates, we may observe an increase in the maldistribution of Medicaid patients across practices.* Both our MCDELIG and MDPOP variables are defined at the county level, and hence may not capture distributional inequalities within the county.

Higher incomes in the physician's county raise private demand, thus significantly depressing entry into the Medicaid market as expected. A 10 percent increase in per capita income (Y) lowers the probability of participation by 3.1 percent.

Once we hold credentials and demand and supply factors constant, there are no specialty differentials in the willingness to treat Medicaid patients, with one exception: OB-GYNs. Being an OB-GYN lowers the probability of participation by 12.3 percentage points, relative to all other specialties. The share of practice devoted to Medicaid patients does vary considerably by specialty, however, among participating physicians. Compared with general and family practitioners (the omitted category), pediatricians spend significantly more time with Medicaid patients, while internists, cardiologists and other medical specialists, ophthalmologists, orthopedic surgeons, and the "other" surgical specialists do significantly less. At least part of these differences can probably be explained by casemix. Many of the latter specialists concentrate their services in an elderly, Medicare-eligible population.

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*This is consistent with earlier work which found that physicians were more likely to operate a "large" Medicaid practice, as opposed to a small one, in areas with a larger Medicaid-eligible pool.[11]

Board-certified physicians are significantly more likely to agree to participate, compared with non-board-certified physicians, but then treat fewer patients. This apparently anomalous result is consistent with previous work on the participation decisions of medical and surgical specialists and of OB-GYNs[2,3]. One explanation is that board-certified physicians may be more likely to practice in public (e.g., clinic or hospital) settings, where it would be difficult to refuse an emergency case.

One of the most consistent findings in all analyses of Medicaid participation has been that foreign medical graduates are significantly more likely to participate in the first place and then to have higher rates. This is still the case; the probability that a FMG will treat Medicaid patients is 5.3 percentage points higher than that of a U.S. trained physician, _ceteris paribus_.

Contrary to other studies that demonstrated a U-shaped relationship of physician age with Medicaid participation, both the MDAGE and the MDAGESQ coefficients are insignificant here. Similarly, there are no differences in participation levels based on gender.

Where practice costs are high, we had hypothesized that the low Medicaid fee schedule would be less likely to cover those costs, and consequently physicians would be less willing to accept Medicaid patients. Instead, the participation decision appears unaffected by higher practice costs (PRACCOSTS). This may be the result of multicollinearity; our practice cost index is highly (positively) correlated with per capita income.

When physician-population ratios (MDPOP) are higher, increased competition for private patients should encourage Medicaid participation. Previous studies have obtained mixed results, depending on the sample studied and the estimation method. Now, in 1984-85, the effects are decidedly negative. In areas where the relative supply of physicians is 10 percent greater than average, the probability of participation is lowered slightly (0.5 percent), and the Medicaid practice shares of participating physicians falls by 2.5 percent. In part, this may be due to a diminishing number of Medicaid eligibles available for any one physician to treat. The number of patient care physicians has risen 44 percent between 1975 and 1985[12], while

the number of Medicaid eligibles has remained virtually constant during the same period[13,14]. In addition, as noted earlier, residential segregation may leave only a small number of physicians available to save the poor, even in very physician-dense areas.

Finally, previous work has shown that physicians' political attitudes also influence their Medicaid participation decisions.[1] Independent attitudinal measures were not included on the 1984-85 survey questionnaire; instead, we tried to proxy them with state voting patterns in the 1984 presidential election, namely the percent of state population voting for Mondale. This variable was significant at the 10 percent level; physicians practicing in states with relatively more votes for Mondale are more likely to accept Medicaid patients.

CONCLUSIONS

The early 1980's witnessed major changes in state Medicaid programs, including eligibility restrictions, service cut-backs, and real fee declines. Despite this, our findings show that a larger proportion of private practice physicians participated in Medicaid in 1984-85 than did in the late 1970's. Most specialties, including OB-GYN, appeared more willing to treat at least some Medicaid patients, suggesting some real gains in access to care. The proportion of physicians participating is probably a more important indicator of access than the average participation rate (i.e., the practice percentage devoted to Medicaid patients averaged across all physicians). Although the latter has declined over this time period, this may represent a more even distribution of Medicaid patients across practices, as the number of nonparticipants has also fallen. In addition, the supply of physicians has grown rapidly from 1975 to 1985, while the number of Medicaid eligibles has remained constant, suggesting fewer Medicaid patients available for any one physician to treat.

That physicians remain sensitive to relative fees also reinforces the recent actions by Congress to improve access to care for low-income pregnant women and children. As part of the 1989 Omnibus Reconciliation bill, Congress

has mandated that state Medicaid programs ensure "adequate" payment levels for obstetric and pediatric services. Our results suggest that this strategy is appropriate; if states are willing to pay more for services (and under this law, they will be forced to do so), then physicians will be more willing to participate in their Medicaid program.

A note of caution should be introduced to these optimistic conclusions, however. Preliminary data from the routine surveys conducted by the American Medical Association (AMA) show that the percent of physicians participating in Medicaid has fallen from 77.2 percent in 1984 to 74.7 percent in 1988, a small but statistically significant decline.[15] The AMA's samples differ from those analyzed here (including employees and hospital-based physicians, for example), and hence may not be directly comparable. Nevertheless, their findings raise questions about the possible volatility of physician participation in Medicaid from one year to the next. Ongoing monitoring will be needed to evaluate the impact of new programmatic changes on physician participation in the 1990's.

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TABLE 1

UNWEIGHTED SAMPLE SIZES BY SPECIALTY

	1977-1978 SURVEY	1984-1985 SURVEY
All Primary Care		1,406
Family Practice		334
General Practice		183
General Surgery		195
Internal Medicine		314
OB-GYN		206
Pediatrics		174
All Medical Specialties		284
Cardiology		100
Other		184
All Surgical Specialties		507
Ophthalmology		121
Orthopedic Surgery		124
Urology		129
Other		133
TOTAL		2,197

Source: 1984-85 Physicians' Practice Costs and Income Survey.

FIGURE 1

DISTRIBUTION OF PHYSICIANS BY MEDICAID PRACTICE SIZE

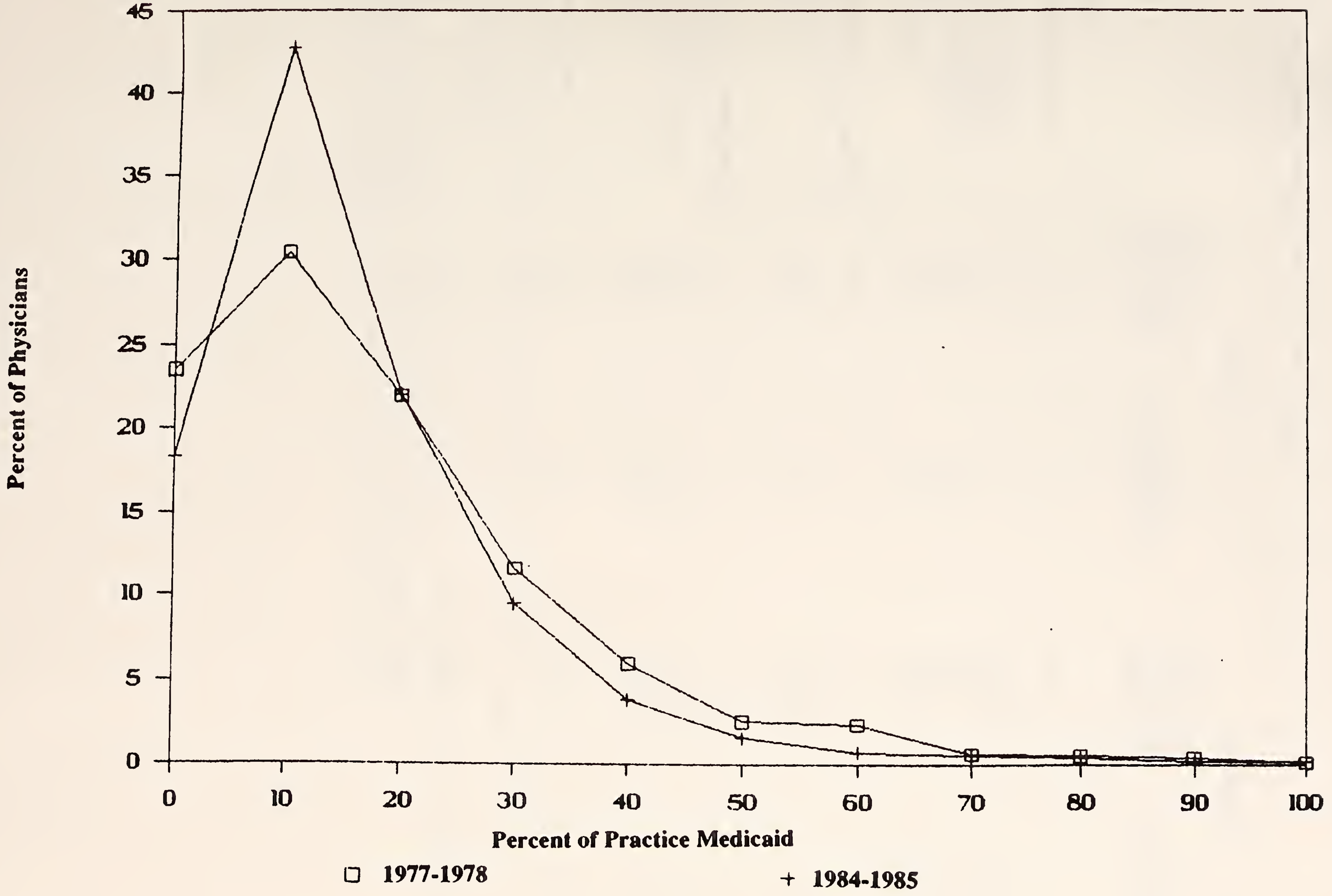

TABLE 2

CHANGES IN MEDICAID PARTICIPATION OVER TIME

	1977-78		1984-85	
	Percent of Physicians Accepting Medicaid	Average Participation Rate	Percent of Physicians Accepting Medicaid	Average Participation Rate
Specialty				
All Primary Care	77.5%	12.7%	82.0%***	10.7%***
Family Practice	[75.1]	[13.1]	81.9**	10.9**
General Practice			86.9***	10.6***
General Surgery	90.3	13.4	88.4	11.7*
Internal Medicine	79.8	13.2	79.9	7.7***
OB-GYN	64.4	8.4	72.9**	10.1
Pediatrics	76.9	14.1	81.4**	16.9*
All Medical Specialties	73.4	8.8	85.1***	7.1**
Cardiology	68.1	6.9	86.1***	6.4
Other	76.0	10.1	84.7***	7.3***
All Surgical Specialties	82.9	12.2	87.0**	7.2***
Ophthalmology	82.0	13.2	87.2	6.6***
Orthopedic Surgery	81.4	9.8	88.5**	6.9***
Urology	88.9	13.2	93.2**	9.1***
Other	84.2	12.4	82.5	7.1***
All Physicians	77.3	12.1	83.5***	9.5***

[a] In the 1977-1978 surveys, this group was limited to allergy, dermatology, and gastroenterology.

[b] In the 1977-1978 surveys, this group was limited to neurosurgery and otolaryngology.

***Significantly different from 1977-78 at the one percent level.
**Significantly different from 1977-78 at the five percent level.
*Significantly different from 1977-78 at the ten percent level.

TABLE 3

MEDICAID PARTICIPATION REGRESSIONS: VARIABLE MEANS AND DEFINITIONS

Variable	Definition	MEANS Eq.1	 Eq.2
PART	Whether physician participates in Medicaid (0=does not participate; 1=participates)	0.84	--
PCTMCD	Percent of practice devoted to Medicaid patients	--	11.34
MCDF	Medicaid fee for a follow-up hospital visit	13.47	13.57
BSF	Blue Shield fee for a follow-up hospital visit	25.03	24.96
LIMITS	Limits and/or prior authorization requirements on physician services under Medicaid	0.44	0.44
MCDELIG	Proportion of county population eligible for Medicaid	0.09	0.09
Y	Per capita income (in 1,000's)	12.14	12.05
IM	Physician is an internist	0.15	0.15
PED	Physician is a pediatrician	0.07	0.07
CARD	Physician is a cardiologist	0.03	0.04
OTHER MED	Physician is another medical specialist	0.09	0.09
OB-GYN	Physician is an OB-GYN	0.10	0.09
GS	Physician is a general surgeon	0.09	0.10
OPHTHAL	Physician is an ophthalmologist	0.05	0.06
ORTHO	Physician is an orthopedic surgeon	0.07	0.07
URO	Physician is a urologist	0.03	0.03
OTHER SURG	Physician is another surgical specialist	0.07	0.07
BOARD	Physician is board-certified	0.66	0.68

TABLE 3 (continued)

MEDICAID PARTICIPATION REGRESSIONS: VARIABLE MEANS AND DEFINITIONS

Variable	Definition	MEANS Eq.1	 Eq.2
FMG	Foreign medical graduate from a non-Western European, non-English speaking country	0.15	0.15
MDAGE	Physician's age	49.53	48.84
MDAGESQ	Physician's age squared	2585.67	2510.41
FEMALE	Physician is female	0.06	0.06
PRAC COSTS	Geographic index of physician practice costs	1.01	1.01
MDPOP	Patient care physicians per 100 population	0.22	0.21
MONDALE	Percent of state population voting for Mondale, 1984	41.50	41.44

TABLE 4

MEDICAID PARTICIPATION REGRESSIONS

Variables	Probability of Participation (Probit)	Percent of Practice Medicaid Participants Only (OLS)
MCDF	0.06***	0.20*
BSF	-0.02***	-0.02
LIMITS	-0.02	-0.09
MCDELIG	-2.87***	49.96***
Y	-0.09***	-0.30
IM	-0.13	-3.12***
PED	-0.23	7.96***
CARD	0.28	-4.15***
OTHER MED	-0.09	-2.58**
OB-GYN	-0.46***	1.76
GS	0.17	1.13
OPHTHAL	0.11	-3.47***
ORTHO	0.04	-3.57***
URO	0.18	-1.64
OTHER SURG	-0.07	-2.34*
BOARD	0.32***	-3.18***
FMG	0.27**	4.82***
MDAGE	-0.03	-0.18
MDAGESQ	0.0002	0.001
FEMALE	0.10	0.91
PRAC COSTS	1.32	10.04
MDPOP	-0.95***	-13.64***
MONDALE	1.31*	0.04
CONSTANT	1.58	7.42
R^2(C)	--	0.17***

***Significant at the one percent level.
**Significant at the five percent level.
*Significant at the ten percent level.

TABLE 5

IMPACT OF SELECTED EXPLANATORY VARIABLES ON MEDICAID PARTICIPATION

	ELASTICITY		MARGINAL EFFECT	
Variable	Probit	OLS	Probit	OLS
MCDF	0.21	0.24	--	--
BSF	-0.16	[a]	--	--
MCDELIG	-0.07	0.40	--	--
Y	-0.31	--	--	--
IM	--	--	[a]	-3.1
PED	--	--	[a]	8.0
CARD	--	--	[a]	-4.2
OTHER MED	--	--	[a]	-2.6
OB-GYN	--	--	-12.3	[a]
OPHTHAL	--	--	[a]	-3.5
ORTHO	--	--	[a]	-3.6
OTHER SURG	--	--	--	-2.3
BOARD	--	--	7.5	-3.2
FMG	--	--	5.3	4.8
MDPOP	-0.05	-0.25	--	--
MONDALE	0.14	[a]	--	--

[a] Variable was not significant.

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